



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,925	12/30/2005	Young-Tack Sul	P57712	3683
8439	7590	08/22/2007	EXAMINER	
ROBERT E. BUSHNELL 1522 K STREET NW SUITE 300 WASHINGTON, DC 20005-1202			AUSTIN, AARON	
			ART UNIT	PAPER NUMBER
			1775	
			MAIL DATE	DELIVERY MODE
			08/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/562,925	Applicant(s) SUL, YOUNG-TAEK	
	Examiner Aaron S. Austin	Art Unit 1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-8,15-17,19 and 20 is/are rejected.
- 7) ☒ Claim(s) 9-14 and 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>12/30/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's arguments traversing the restriction requirement are convincing. Because all claims previously withdrawn from consideration under 37 CFR 1.142 have been rejoined, **the restriction requirement as set forth in the Office action mailed on 5/9/07 is hereby withdrawn.** In view of the withdrawal of the restriction requirement as to the rejoined inventions, applicant(s) are advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Once the restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. See *In re Ziegler*, 443 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

Art Unit: 1775

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because it was filed as the first page of International Publication No. WO 2005/084577, rather than as a single paragraph on a separate sheet. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In particular, claim 3 recites the composition of the magnesium titanate oxide film in percentage value without designating the physical attribute upon which the percentage calculation is based. As the claim fails to designate if the percentage values are based on weight, volume, or other physical attribute, the composition is not distinctly claimed and thus the claim is indefinite.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5, 6, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vizethum et al. (DE 4407993) in view of Kamiya et al. (JP 2003-268481 – see the enclosed computer translation), and further in view of the teachings of Chang et al. (KR 9208348 – abstract enclosed).

Vizethum et al. teach an implant comprising a titanium or titanium alloy implant body (2, 4) having a suitable oxide layer (30, 31).

Vizethum et al. do not teach the suitable oxide layer as being a magnesium titanate oxide film formed by low voltage dielectric breakdown anodic oxidation.

Kamiya et al. teach a composite suitable for use in implantation formed by sintering a mixture of magnesium oxide and titanium. Sintering these constituents is expected to produce magnesium titanate oxide (see the enclosed abstract for KR 9208348 for example). Therefore, as Kamiya et al. clearly teaches a composite comprising magnesium titanate oxide provides the advantage of a suitable oxide for an implant, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use magnesium titanate oxide as the oxide coating of Vizethum et al.

Please note, claims 1, 19, and 20 include product by process language (e.g., formation by low voltage dielectric breakdown anodic oxidation). The above arguments establish a rationale tending to show the claimed product is the same as what is taught by the prior art. “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 227 USPQ 964,966. Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983), MPEP 2113.

Regarding claims 5 and 6, the thickness of the oxide layer taught by Vizethum et al. is in the range of 200 to 500 nm (claim 1).

Claims 1, 4-8, 15, 17, 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vizethum et al. (DE 4407993) in view of Kamiya et al. (JP 2003-268481 – see the enclosed computer translation), and further in view of the teachings of Chang et al. (KR 9208348 – abstract enclosed), and still further in view of Hall et al. (WO 00/72777 A1) and Kruger (DE 2135004).

Vizethum et al. in view of Kamiya et al. and Chang et al. teach an implant as described above.

Vizethum et al. in view of Kamiya et al. and Chang et al. do not teach the process for preparation of the implant as claimed. More particularly, they do not teach irradiation with UV light and anodic oxidation in an electrolyte solution.

Hall et al. teach a titanium implant having a relatively thick oxide layer formed by anodic oxidation in an electrolyte solution at a voltage of 150 to 400 volts (page 8, lines 36-39; page 10, lines 1-8). Soaking in an aqueous solution precedes the anodic oxidation process. The process may be used to produce an oxide layer of 1-20 microns (page 13, lines 9-11). Therefore, as Hall et al. clearly teach anodic oxidation in an electrolytic solution provides the advantage of a desirable porous oxide for coating a titanium implant, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to form the oxide layer of Vizethum et al. using this method.

Kruger teaches use of UV irradiation in conjunction with anodic oxidation of metals such as titanium. Therefore, as Kruger clearly teaches UV irradiation in conjunction with anodic oxidation of titanium provides the advantage of a process performed at reduced potential, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to perform anodic oxidation as taught by Hall et al. in conjunction with UV radiation to form the implant of Vizethum et al. Regarding the duration of irradiation, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the duration of irradiation for the intended application, since it has been held that discovering an optimum value of a result

Art Unit: 1775

effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 4, Hall et al. teach formation of different areas within the oxide layer which may include an upper layer of open pores and a lower barrier layer of closed pores (page 7, lines 25-35).

Regarding claim 8, it would be obvious to one of ordinary skill in the art at the time of the claimed invention to use an electrolyte solution of single or mixed composition containing magnesium to form the oxide of Vizethum et al. as it would allow for the formation of the magnesium titanate oxide of Kamiya et al. as outlined above.

Allowable Subject Matter

Claims 9-14 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

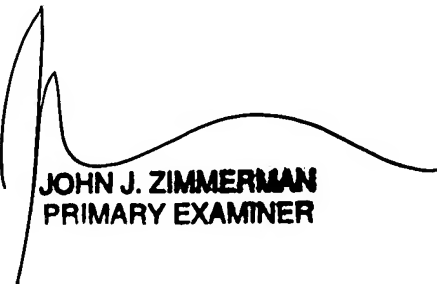
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron S. Austin whose telephone number is (571) 272-8935. The examiner can normally be reached on Monday-Friday: 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1775

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ASA



JOHN J. ZIMMERMAN
PRIMARY EXAMINER